significant difference was observed (median change in calcium score: 231 [IQR: 79 to 446] AU/year vs. 124 [IQR: 61 to 321] AU/year; p = 0.14). Neither tracer offered independent prediction of clinical outcomes after correction for CT calcium scoring, perhaps reflecting the small number of events and again the collinearity between imaging parameters.

In conclusion we demonstrated that both ^{18}F-fluoride and ^{18}F-FDG predicted disease progression and adverse clinical outcomes in aortic stenosis. In particular, ^{18}F-fluoride provided excellent prediction of the change in CT calcium score, appearing to be of incremental value to baseline CT imaging. Larger studies are required to confirm the incremental predictive value of PET compared with CT. However, our data would support PET/CT as a novel method for measuring disease activity in aortic stenosis, with the ability to predict its natural history. This may be of particular value in studies investigating novel therapies, in which beneficial treatment effects are likely to be detected rapidly without the need for protracted follow-up. (Role of Active Valvular Calcification and Inflammation in Patients With Aortic Stenosis; NCT01358513)

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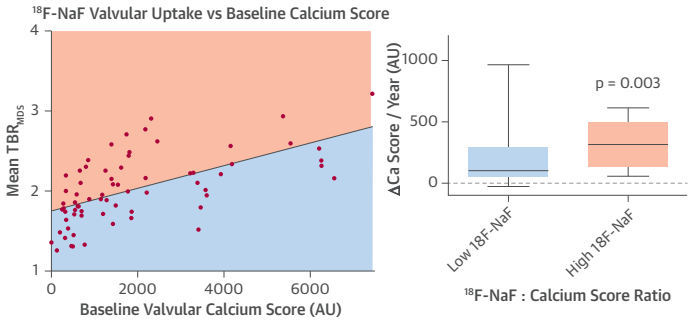
FIGURE 2 ^{18}F-Flouride Uptake for a Given CT Calcium Score



Patients with higher than expected ^{18}F-fluoride uptake for a given CT calcium score **(dots in red above regression line)** demonstrated disease progression rates 3-fold greater than those with lower than expected uptake **(dots in blue below regression line)**. The same was not true for ^{18}F-fluorodeoxyglucose. AS = aortic stenosis; TBR_{MDS} = most diseased segment tissue: background ratio; ^{18}F-NaF = ^{18}F-fluoride.

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Trends in Infective Endocarditis Incidence, Microbiology, and Valve Replacement in the United States From 2000 to 2011

The Devil Is in the Details

We read with great interest the paper by Pant et al. (1) regarding trends in infective endocarditis (IE) incidence using the Nationwide Inpatient Sample (NIS) database to address a nagging question that has rightfully garnered much attention and gravity: have recent changes in IE prophylaxis guidelines for dental procedures in this country and abroad resulted in an increase in IE incidence caused by viridans group streptococci (VGS)? As investigators who have previously used the NIS database (2,3), we pose 2 concerns to Pant et al. First, they unfortunately used ICD-9-CM codes that included enterococcal (04104) and non-VGS (038.2 *Streptococcus pneumoniae* septicemia, and

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beta-hemolytic streptococci: 04100 Group A streptococci, 04102 Group B, 04103 Group C, 04105 Group G) IE cases under the category of "streptococcal." This has major implications as we evaluate the risk, if any, of dental procedures and the subsequent development of IE caused by VGS. In this regard, our findings (2,3) and those of Bor et al. (4), which were both derived from the same database (NIS), did not demonstrate an increase in IE incidence caused by VGS.

Second, the work by Pant et al. was presented at the American College of Cardiology 2014 meeting in a preliminary format (5) and they identified an increase in IE incidence from 2000 to 2011 caused by staphylococci, but reported that there was no increase in IE caused by "VGE" (which we assume was in reference to VGS). Interestingly, there was no designation for "enterococci" in that abstract for the 2014 meeting, or in the current publication (1).

The enterococcal designation is an important one because these organisms are a predominant cause of IE and its prevalence seems to be increasing. For example, an extensive systematic review by Slipczuk et al. (5) of IE over the past 5 decades (up through 2011) demonstrated the prevalence of staphylococcal and enterococcal IE had both increased; in contrast, VGS IE had declined.

The only conclusions that we can derive from the current publication (1) is that there was a key error in the selection of ICD-9-CM codes to define the microbiology of IE and that has likely resulted in a flawed conclusion that "there has been a significant rise in the incidence of streptococcus IE following the 2007 guideline revision." Therefore, we request that Pant et al. perform a focused analysis of IE caused by VGS to clarify the issue.

These database reviews are critical as guidelines committees struggle to answer one of the most important questions in IE prevention: is antibiotic prophylaxis for certain dental procedures efficacious? This struggle, in large part, is caused by the lack of a randomized controlled clinical trial, as highlighted in an accompanying editorial and has been a plea echoed for decades.

Going forward and until clinical trial data are available, a second plea seems in order. In studies of cardiovascular infections, a cadre of experts from different fields should be included, as done in individual patient management of IE.

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REPLY: Trends in Infective Endocarditis: Incidence, Microbiology, and Valve Replacement in the United States From 2000 to 2011

The Devil Is in the Details

We thank Dr. DeSimone and colleagues for their interest in our paper. In our study, we focused on infective endocarditis (IE) microbiology to *Staphylococcus*, *Streptococcus*, gram-negative, and fungal organisms. Our study differs from previous papers from the Nationwide Inpatient Sample database (1,2) in 2 aspects. First, we did include infections from all streptococcal groups (A, B, C, D [enterococcus], G, and unspecified) and did not report viridans group *Streptococcus* (VGS) separately. Second, previous studies on IE trends in the United States had a very limited follow-up of only 2 years after the guideline publication. Longer follow-up studies are necessary to assess the impact of any "practice changing" guideline because it takes years to note the impact of such change. Similar observations were made in the United Kingdom where a steady incidence of IE was noted for the first 2 years after publication of new guidelines, whereas a 5-year follow-up detected a significant rise (3,4). Our study emphasizes the